**Tracking and recognizing the activity of multi resident in smart home environments**


ABSTRACT

Tracking and recognizing the functional activities in a smart home environment using ambient sensor technology is becoming an interesting field to discover. Its passive and unobtrusive in nature has made it impossible to infer the resident activities. The problems are becoming complex when it is involving multi resident living together in the same environment. Existing works mainly manipulate data association and algorithm modification on extra auxiliary of graphical nodes to model human tracking information in an environment to incorporate with the problems. Thus, recognizing activities and tracking which resident perform the activity at the same time in the smart home are vital for the smart home development and future applications. This paper goal is to perform accurate tracking and recognizing of individualôs ADL of multi resident setting in the smart home environment. Also enable to foresee the patterns of everyday activities that commonly occur or not in an individualôs routine by considering the simplification and efficient method using the multi label classification framework. We perform experiments on real world multi resident on ARAS Dataset and shows that the LC (Label Combination) using Decision Tree (DT) as base classifier can tackle the above problems.



**Keyword:** Activity recognition; Label combination; Multi label classification; Multi resident; Smart home environment